



Open Office Floor Plan – Underfloor Air Distribution

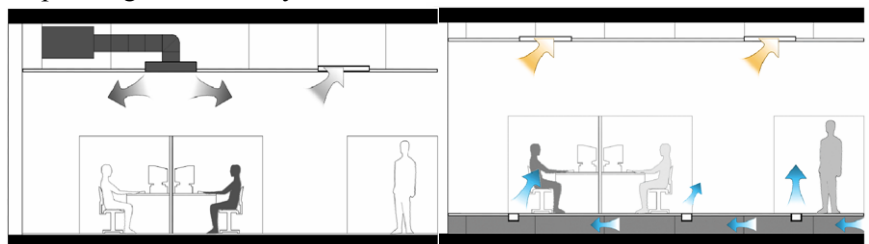
Location: Floors 2 through 6 utilize this unconventional air delivery system, except for the elevator lobbies and restrooms where a light-weight concrete platform was raised.

Stats: 200,000 square feet of underfloor system. 3,000 floor diffusers.



Underfloor Air Distribution (UFAD).

- UFAD is a technology that provides point-specific heating and cooling and is a more energy efficient heating-ventilating-air-conditioning design.
- The 16-inch raised floor system provides the means for delivering cool conditioned air to workers on Floors 2-6. Swirl diffusers create a pool of supply air at the floor level, which is then drawn to the heat loads by natural convection. This stratification effect cools the comfort zone (about 4-feet above the floor) while the heat from people, computers, and lights naturally rises to the ceiling. A return grille in the ceiling sends the air back to the central plant.
- Heating is from a series of perimeter vents in the UFAD system. Warm air is pushed along the walls and windows to offset the heat loss that occurs when it is cold outside.
- The UFAD system allows individual temperature control to enhance employee productivity and comfort by use of adjustable floor diffusers.
- Accompanying the installation of the first UFAD system in a state building, the Department of Finance requested that a study be undertaken to quantify the costs and benefits of the UFAD system. The UC Berkeley Center for the Built Environment, a leader in raised floor research, is conducting a field study to determine the positive and negative impacts of underfloor vs. conventional air distribution systems. The study will measure and collect data over a specified time frame at two of the new Capitol Area East End buildings, evaluating energy use, indoor environmental quality, occupant satisfaction and comfort, and operating/churn/life-cycle costs.



Conventional Overhead
Supply and Return

Underfloor Supply
Ceiling Return

Capitol Area East End Complex – Block 225
California Department of Education Headquarters

Green Building Tour